

APPLICATION  
FOR  
UNITED STATES LETTERS PATENT  
ENTITLED

NETWORKED AUDIO POSTING METHOD AND SYSTEM

TO WHOM IT MAY CONCERN:

BE IT KNOWN THAT (1) JEFFREY M. VALENTINE, (2) MICHAEL BERNARDO, and (3) BENJAMIN KRYSIAK, of (1) 51 Lopez Street, Apartment 4, Cambridge, Middlesex County, Massachusetts, (2) 2 Longwood Drive, Andover, Essex County, Massachusetts, and (3) 11 Monument Square, Charlestown, Middlesex County, Massachusetts, invented certain new and useful improvements entitled as set forth above of which the following is a specification:

PATENT GROUP  
FOLEY, HOAG & ELIOT LLP  
ONE POST OFFICE SQUARE  
BOSTON, MA 02109-2170  
TEL: 617-832-1000  
FAX: 617-832-7000

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2  
3 NETWORKED AUDIO POSTING METHOD AND SYSTEM

4  
5 CLAIM OF PRIORITY

6 This application claims priority to U.S.S.N. 60/214,151,  
7 entitled "Networked Audio Posting Method and Apparatus," filed on  
8 June 26, 2000, naming Jeffrey M. Valentine, Michael Bernardo, and  
9 Benjamin Krysiak as inventors, the contents of which are herein  
10 incorporated by reference in their entirety, and this application  
11 also claims priority to U.S.S.N. 60/254,749 entitled "Networked  
12 Audio Posting Method and Apparatus," filed December 11, 2000 and  
13 naming Jeffrey M. Valentine, Michael Bernardo, and Benjamin  
14 Krystak as inventors, the contents of which are herein  
15 incorporated by reference in their entirety.

16  
17 BACKGROUND

18 (1) Field

19 The disclosed methods and systems relate generally to audio  
20 data on a communications network, and more particularly to  
21 distributing audio data on a communications network such as the  
22 internet.

23 (2) Description of Related Art

1           The internet is arguably the most well-known communications  
2 network, with a percentage of personal computers purchased for  
3 the sole purpose of internet communications. A popular feature  
4 of the internet is the World Wide Web that allows network users  
5 access to posted electronic information at an ever-increasing  
6 number of "websites" located throughout the network.  
7 Accordingly, other devices such as cellular phones and personal  
8 digital assistants (PDAs) are being enhanced to provide internet  
9 accessibility.

10           Media data including audio and graphics information, can be  
11 among the more popular data accessed through the internet.  
12 Additionally, streaming audio and/or video data can be accessed  
13 in near real-time, allowing users to listen to radio broadcasts,  
14 for example. There are many different applications that may be  
15 installed on various user's personal computers to facilitate the  
16 download and subsequent listening to or viewing of audio or video  
17 data, respectively.

18           Similarly, for an internet user to create audio or video  
19 data, specialized software applications and accessory equipment  
20 can be required to be installed on the user's personal computer  
21 or other network accessible device. Such applications can be  
22 expensive, can require frequent updates, and can consume large  
23 amounts of memory. Additionally, the applications can be  
24 operating-system dependent, and therefore a user typically cannot

1 transport the application to another computer with a different  
2 operating-system. Similarly, data generated on one particular  
3 operating system may not be viewed on or accessed by a personal  
4 computer or other device using a different operating system.

#### 6 SUMMARY

7 The systems and methods allow audio data to be distributed  
8 with text documents, including HTML documents, over a network  
9 such as the internet. The audio data can be an audio file that  
10 can be located on a central server that can also be accessed by  
11 the network. The audio data can be associated with at least one  
12 identifier that can include, for example, a Personal  
13 Identification Number (PIN) or a customer ID number, although  
14 such examples are provided for illustration and not limitation.  
15 In some embodiments, a second identifier can be generated and  
16 associated with the audio data. The second identifier can  
17 thereafter be provided for incorporation in the text document.  
18 For example, the second identifier can be associated with a  
19 pointer or other reference that is included in the text document.

20 Additionally or optionally, the second identifier can be  
21 provided in an email or HTTP post that can allow the audio data  
22 to be referenced and/or approved before the second identifier is  
23 included in the text document. In some embodiments, the second  
24 identifier can be the same as the first identifier.

1 Other objects and advantages of the methods and systems will  
2 become obvious hereinafter in the specification and drawings.

#### 3 4 BRIEF DESCRIPTION OF THE DRAWINGS

5 FIG. 1 is an architectural block diagram of a system  
6 implementing one embodiment of the invention;

7 FIG. 2 is a block diagram of a first embodiment according to  
8 FIG. 1;

9 FIG. 3 is a block diagram of a second embodiment according  
10 to FIG. 1;

11 FIG. 4 is a representative diagram of a database for systems  
12 according to FIGS. 1 through 3;

13 FIG. 5 is a block diagram of a third embodiment according to  
14 FIG. 1; and,

15 FIG. 6 is a block diagram of a fourth embodiment according  
16 to FIG. 1.

#### 17 18 DESCRIPTION

19 To provide an overall understanding, certain illustrative  
20 embodiments will now be described; however, it will be understood  
21 by one of ordinary skill in the art that the systems and methods  
22 described herein can be adapted and modified to provide systems  
23 and methods for other suitable applications and that other

1 additions and modifications can be made without departing from  
2 the scope of the systems and methods described herein.

3 The systems and methods allow communications systems users,  
4 such as internet users, to create audio files, and post such  
5 audio files on a common or centrally located server for retrieval  
6 (e.g., listening). In some embodiments, the audio files can be  
7 protected to allow retrieval and/or editing by specified or  
8 identified users, using, for example, a PIN. The audio creation,  
9 posting, and retrieval can allow network users to listen to  
10 streaming audio while viewing a website, web page, email, or  
11 other text document, without requiring local software or hardware  
12 installation. Warning boxes that can be caused by required  
13 installations, and buffering delays, can be avoided with the  
14 systems and methods.

15 In one embodiment, the audio stream can be served by HTTP on  
16 port 80 to eliminate firewall or other filtering exclusions.

17 In one embodiment, the methods and systems can be  
18 implemented using a platform independent technology such as Java.

19 In such an embodiment, the methods and systems may not require  
20 installation, but rather, can utilize the processes of the  
21 installation-free native code Java applet. The audio data can be  
22 posted using standard HTTP conventions to allow anyone with a  
23 computer microphone and computer audio listening device to create  
24 and listen to audio files.

1           The methods and systems can also convert an audio stream  
2 from one format to another format, for example, from the well-  
3 known "GSM.wav" format, to the "mu-law.au" format.

4           In one embodiment, internet users in a threaded discussion  
5 group can exchange entertainment and information in an audio  
6 form. For example, one user can post an audio message to the  
7 group, wherein another user can thereafter listen to the audio  
8 message and reply to it by creating another audio message. The  
9 original posting can constitute a new thread such that other  
10 users can increase the size of the thread by replying (with their  
11 own voice) to either the original or second user. Other users  
12 can additionally select to start a new thread.

13           The methods and systems can be provided as a tool that can  
14 be understood as a service to a subscriber website. The service  
15 can provide audio posting capability to the website as a private-  
16 labeled feature, without imposing significant software, hardware,  
17 or bandwidth constraints on the subscriber or the subscriber's  
18 resources. In one embodiment, a specified Universal Resource  
19 Location (URL) can be added to the subscriber web site, wherein  
20 the URL can activate an applet that is customized or private-  
21 labeled for the subscriber, and by the subscriber. The applet  
22 can present a user of the subscriber website with audio controls,  
23 prompting the user to, for example, record, stop, preview, pause,  
24 and save a spoken audio clip or audio data that the user can

1 record by speaking into a microphone. The user-generated audio  
2 data can be accepted as an audio file for transmission to a  
3 centrally located server or other computer. The central server  
4 can issue a HTTP post to a specified CGI/servlet acceptor that  
5 receives information on the storage location of the file, and  
6 stores it in a subscriber database. The subscriber website can  
7 include another URL that can activate an applet that is private-  
8 labeled for that subscriber, to present a subscriber website user  
9 with audio controls to pause, stop, and view the progress of an  
10 audio playback in response to an audio file that can be requested  
11 from the central server. The central server can return the audio  
12 file to the subscriber computer, and the user can listen to the  
13 file using an audio device.

14 The methods and systems can dynamically generate the central  
15 server location of an audio file that is created and stored to  
16 the central computer, as described herein, and later retrieved.

17 The subscriber can provide full audio message board  
18 functionality as a complete product, without requiring website  
19 software, hardware, or other infrastructure alterations.

20 As indicated herein, the methods and systems can provide  
21 private-labeled applets to website subscribers. In one  
22 embodiment, a generic applet, when called by a subscriber's web  
23 page, can activate the applet server and communicate the  
24 subscriber identification. The server can return assorted



1 graphics to the generic applet for display by the generic applet,  
2 thereby presenting to the subscriber a customized, subscriber-  
3 specific applet.

4 The methods and systems can hence allow audio data to be  
5 associated with a text document. In some embodiments, the text  
6 document can be a HTML document, including a web page, although  
7 such an example is provided merely for illustration and not  
8 limitation. Those with ordinary skill in the art will recognize  
9 that web pages include merely one form of HTML documents, and  
10 other HTML and non-HTML documents can be utilized while remaining  
11 within the scope of the disclosed methods and systems.

12 Referring now to FIG. 1, there is a block diagram of a  
13 system 10 that includes one embodiment of the methods and systems  
14 disclosed herein for posting audio data for access by a network  
15 or other remote device, including for example, a telephone.  
16 Accordingly, although the systems and methods have wide  
17 applicability, for the purposes of illustrative discussion, it  
18 can be understood that the illustrated systems and methods can be  
19 described relative to systems and methods that can be implemented  
20 across a computer network such as the internet, although such an  
21 example is provided for illustration and not limitation.  
22 According to an internet embodiment, an internet user can access  
23 the internet using what can be referred to herein as an  
24 initiating device 21. The initiating device 21 can include a

1 digital computer system that can utilize a wired or wireless  
2 communications link to connect to a communications network such  
3 as the internet. A user of the initiating device 21 can utilize  
4 different peripheral devices that can be integrated with or  
5 otherwise configured for compatible use with the initiating  
6 device 21. For example, the initiating device 21 can include a  
7 keyboard, keypad, stylus, digital camera, microphone, etc., that  
8 can communicate data to the initiating device 21 using wired or  
9 wireless communications systems and/or protocols, etc. The  
10 initiating device 21 can be a microprocessor-based system  
11 including a computer workstation, such as a PC workstation or a  
12 SUN workstation, handheld, palmtop, laptop, personal digital  
13 assistant (PDA), cellular phone, etc., that includes a program  
14 for organizing and controlling the initiating device 21 to  
15 operate as described herein. Additionally and optionally, the  
16 initiating device 21 can be equipped with a sound and video card  
17 for processing multimedia data. The initiating device 21 can  
18 operate as a stand-alone system or as part of a networked  
19 computer system. Alternatively, the initiating device 21 can be  
20 dedicated devices, such as embedded systems, that can be  
21 incorporated into existing hardware devices, such as telephone  
22 systems, PBX systems, sound cards, etc. Accordingly, it will be  
23 understood by one of ordinary skill in the art that the

1 initiating device 21 described herein has wide applicability and  
2 can be incorporated in many systems, and realized in many forms.

3 Those with ordinary skill in the art will recognize that the  
4 initiating device 21 can be connected to a network such as the  
5 internet and can be equipped with what is well-known as an  
6 internet "browser" such as the commercially available Netscape  
7 Navigator, Internet Explorer, etc., browsers. Depending upon the  
8 initiating device 21 and its configuration, the browser can  
9 differ, and hence references herein to a browser can include  
10 references to a user interface to the internet or other network,  
11 wherein the methods and systems herein are not limited to the  
12 browser or other network interface. Furthermore, the initiating  
13 device 21 can access the internet using wired or wireless  
14 communications links and/or protocols.

15 As is well-known in the art for internet communications, the  
16 initiating device 21 can communicate with other devices on the  
17 internet. These other devices can be similar to the initiating  
18 device 21, however common terminology includes "servers" that can  
19 include or "host" web pages. The initiating device 21 can  
20 contact a server 12, 20 and cause the server 12, 20 to provide  
21 information for display on the initiating device 21. Such  
22 information can include, but is not limited to, a web page  
23 associated with the server 12, 20. Accordingly, a server 12, 20  
24 can be also be a microprocessor-based system including a computer

1 workstation, such as a PC workstation or a SUN workstation,  
2 handheld, palmtop, laptop, personal digital assistant (PDA),  
3 cellular phone, etc., that includes a program for organizing and  
4 controlling the server 12, 20 to operate as described herein.  
5 Additionally and optionally, the server 12, 20 can be equipped  
6 with a sound and video card for processing multimedia data. The  
7 server 12, 20 can operate as a stand-alone system or as part of a  
8 networked computer system. Alternatively, the server 12, 20 can  
9 be dedicated devices, such as embedded systems, that can be  
10 incorporated into existing hardware devices, such as telephone  
11 systems, PBX systems, sound cards, etc. In some embodiments,  
12 servers 12, 20 can be clustered together to handle more traffic,  
13 and can include separate servers for different purposes such as a  
14 database server, an application server, and a Web presentation  
15 server. The server 12, 20 can also include one or more mass  
16 storage devices such as a disk farm or a redundant array of  
17 independent disk ("RAID") system for additional storage and data  
18 integrity. Read-only devices, such as compact disk drives and  
19 digital versatile disk drives, can also be connected to the  
20 server 12, 20. As used herein, the term "server" is intended to  
21 refer to any of the above-described servers. In an embodiment,  
22 the initiating device 21 and the server 12, 20 can be similar  
23 systems.

1 Alternately, the term "web page" can be understood to  
2 include any document that is associated with a Universal Resource  
3 Locator (URL) on the internet or World Wide Web. Those with  
4 ordinary skill in the art will recognize that there can be  
5 varying formats for web pages, and these formats can include HTML  
6 code, perl scripts, java scripts, applets, etc., that can be  
7 integrated into the documents. Accordingly, an initiating device  
8 21 can contact a server 20 and the server 20 can cause a web page  
9 to be transferred to the initiating device 21 and appear on the  
10 display of the initiating device 21, via the browser.

11 Referring back to FIG.1, there is a system server 12 that  
12 can be understood to include one or more servers. As FIG. 1  
13 illustrates, the system server 12 includes at least one custom  
14 dll (dynamic link library) 14 that can be described further  
15 herein, at least one CGI (common gateway interface) program 16  
16 that can also be described further herein, and at least one  
17 database 18 that can include, for example, audio files. The  
18 illustrated database 18, and the databases disclosed herein, can  
19 be accessed locally or through a network such as the internet  
20 using wired or wireless communications devices and protocols.  
21 The database 18 can be understood to include a memory having one  
22 or more physical or logical partitions and/or segments, and can  
23 optionally and additionally utilize one or more of well-known  
24 database packages including MySQL, SQL, Oracle, Informix, Sybase,

1 the Freedom Engine, Access, ODBC, DB2, etc., with such examples  
2 provided for illustration and not limitation. In an embodiment,  
3 the database 18 can reside in a memory of the system server 12.

4 The illustrated database 18 can also associate audio files  
5 with data representing identifiers, for example, a personal  
6 identification number (PIN), a media\_ID identifier, a customer  
7 identification identifier, and/or a duration of the audio file.  
8 Although the illustrated systems utilize integers to represent  
9 the aforementioned quantities, those with ordinary skill in the  
10 art will recognize that the methods and systems are not limited  
11 to the identifier format or composition.

12 FIG. 1 also includes a subscriber server 20 that can  
13 represent a subscriber to the services or methods and systems  
14 provided herein and facilitated by the system server 12. A  
15 subscriber server 20 can be an internet entity having a web page  
16 at an identified URL, and a user at an initiating device 21 can  
17 cause the subscriber server's web page to be transferred and  
18 otherwise displayed on the initiating device 21. Accordingly,  
19 those with ordinary skill in the art will recognize that the  
20 subscriber server web page can be encoded using HTML, and the  
21 HTML coding can include a recorder applet 22. When the web page  
22 and recorder applet are transferred to the initiating device 21,  
23 the recorder applet can survey the initiating device 21 to  
24 determine if the custom dll 14 resides on the initiating device

21. If the custom dll 14 is not present on the initiating device 21, the recorder applet 22 can cause the custom dll 14 to be retrieved from the system server 12, via the communications network or other communications system. The custom dll 14 can thereafter be stored within the local memory of the initiating device 21. In an embodiment, the custom dll 14 includes versioning flags, hence the recorder applet 22 can automatically update the latest version of the custom dll 14.

For the FIG. 1 system, the recorder applet 22 can provide a Java GUI (graphical user interface) to the initiating device user 21. The GUI can include buttons to record, play, stop, pause, erase, and preview audio data, etc., and transmit ("save") an audio file to the system server 12. The illustrated recorder applet 22 utilizes the custom dll 14 as a connection between a native operating system sound API (Application Programmer Interface) 24 and a microphone 26. The microphone 26 can be internal or external to the initiating device 21. The illustrated applet 22 can utilize, for example, Java Native Interface (JNI) to communicate with the native operating system dlls to open a sound card associated with the initiating device 21, capture sound from the microphone, and store the audio stream in a temporary file 28 in local memory of the initiating device 21. Accordingly, a user at the initiating device 21 can manipulate (preview, pause, stop, play, etc.) the audio data in

1 the temporary file 28, and/or transmit the audio file to the  
2 system server 12.

3 Upon the user indicating a decision to save or transmit the  
4 audio file, the recorder applet 22 can utilize a HTTP Post  
5 operation to submit the file to a CGI program 16 on the system  
6 server 12. The recorder applet 22 can transmit the audio binary  
7 data, and other descriptive information including, for example,  
8 the duration of the audio file and at least one identifier that  
9 can identify the subscriber. In some embodiments, an identity  
10 for the user 21 can be generated. The CGI program 16 can cause  
11 the received data to be parsed, can generate a media\_ID for the  
12 audio file, and can include the received and generated data in  
13 the database 18.

14 In an embodiment according to FIG. 1, the applet 22 can be a  
15 generic applet that can be customized using parameters designated  
16 by the subscriber server. Accordingly, the GUI and other applet  
17 functionality can be specified and/or selected by a subscriber.

18 Referring now to FIG. 2, there is an embodiment 30 that can  
19 be utilized optionally and additionally to an embodiment  
20 according to FIG. 1. In an embodiment according to FIG. 2, a  
21 telephone 38 can be utilized to post information to the system  
22 server 12. The FIG. 2 system server 12 optionally and  
23 additionally includes a telephone server 32 and at least one  
24 database 18. The database 18 of FIGs. 1 and 2 can be the same or



1 different databases. The FIG. 2 system server 12 also includes a  
2 program, for example, a Java program, that provides a pop-up  
3 window 34. The program 34 can be invoked through a HTML  
4 hyperlink 36 that can be included on a subscriber server's web  
5 page that is thereafter downloaded to an initiating device 21 by  
6 a user.

7 When the illustrated pop-up window 34 is activated by the  
8 initiating device user 21 through the hyperlink 36 associated  
9 with subscriber server's web page, the pop-up window 34 can  
10 detect the subscriber server's 20 identity, and can provide the  
11 initiating device user 21 with a telephone number to dial, and a  
12 Personal Identification Number (PIN) that can be associated with  
13 the subscriber server. In the FIG. 2 system, the PIN and  
14 telephone number can be provided with a graphic. The user 21 can  
15 thereafter utilize the telephone 38 and the provided telephone  
16 number to connect to the telephone server 32 that can, according  
17 to the PIN (and hence the subscriber server identity), generate a  
18 subscriber-customized set of telephone prompts to allow the user  
19 21 to record audio data. For example, the user can utilize  
20 telephone keypad buttons and/or voice commands to record, play,  
21 preview, stop, pause, erase, and save or transmit the audio data.

22 Accordingly, the audio prompts, prompt order, logic flow between  
23 prompts, and actions resulting from prompts, can be customized.  
24 Upon termination of the telephone call and recognition of saved

1 data, the telephone server 32 can cause the audio file to be  
2 stored in the database 18 with other associated data including,  
3 for example, the PIN, a generated media\_ID, and duration data  
4 based on the created audio file.

5 Those with ordinary skill in the art will recognize that the  
6 FIG. 2 pop-up window 34 can be implemented using a high-level  
7 language such as Java, C, C++, etc., or assembly language,  
8 although such examples are provided for illustration and not  
9 limitation.

10 In an embodiment according to FIG. 2, users 21 can be  
11 associated with a subscriber server 20 and can accordingly be  
12 provided pre-defined PINs that can allow the users 21 to provide  
13 audio data directly via telephone without accessing a subscriber  
14 web page to obtain a telephone number and/or PIN.

15 Those with ordinary skill in the art will recognize that the  
16 methods and systems of FIGs. 1 and 2 can be combined to a single  
17 system that allows posting of audio data via microphone and/or  
18 telephone. In an embodiment with such capability, an applet can  
19 present an option graphic to the user 21 that allows the user to  
20 select the microphone or telephone posting methods and systems.

21 Referring now to FIG. 3, there is a representative block  
22 diagram 50 that employs methods and systems according to FIGs. 1  
23 and 2. As FIG. 3 indicates, the system server 12 can include a  
24 file server 52 that can include audio files. In the FIG. 3

1 system, the audio files can be stored in ".wav" format, although  
2 such an example is provided for illustration and not limitation.

3 The file server 52 can be in communication with a database 18  
4 that can associate Link\_keys to media\_IDs. The FIG. 3 database  
5 18 can be the same or a different database as indicated and  
6 otherwise depicted in FIGs. 1 and 2. For the FIG. 3 systems and  
7 methods, the media\_IDs associate to an audio file, and for the  
8 illustrated systems and methods, an audio file has a unique  
9 media\_ID. Alternately, a media\_ID can be associated with more  
10 than one Link\_key, although in some embodiments, a unique  
11 relationship between media\_ID and Link\_Key can be provided.  
12 Furthermore, a Link\_Key can be associated with a subscriber  
13 server 20. As FIG. 3 illustrates, the subscriber server 20 can  
14 have a web page that includes an HTML applet tag 54 that includes  
15 a Link\_key associated with the subscriber and/or subscriber  
16 server 20. The HTML applet tag 54 references an applet on the  
17 system server 12. The media\_ID can also be generated using an  
18 applet on the system server 12. In some embodiments, the  
19 media\_ID can be the same as a PIN or customer ID, and in such  
20 embodiments, a separate media\_ID may not be generated.

21 With continued reference to FIG. 3, when a user of an  
22 initiating device 21 transfers the subscriber server's 20 web  
23 page, the applet is transferred to the initiating device 21 and  
24 communicatively connects the initiating device 21 to the system

1 server 20. Accordingly, for the illustrated system, when the  
2 applet is activated or receives a request to play an audio file,  
3 the applet makes a standard HTTP connection over port 80, to the  
4 system server 12. In an embodiment, the applet can utilize a  
5 first "get" to retrieve information about the audio file that  
6 includes the duration and the physical location. In a second  
7 "get", the applet can retrieve the audio file utilizing a data  
8 buffering technique to determine a buffer size based on the  
9 internet or other network latency issues, and the user's 21  
10 connection speed.

11 In one embodiment, the audio file can be offered using an  
12 8KHz GSM format, where the applet can decode the audio stream in  
13 real time to a 8KHz mu-law format that can be compatible with  
14 Java's audio API. Additionally and optionally, a 8KHz mu-law  
15 format can be used that can stream at 8Kbps using an applet  
16 footprint on the initiating device 21. The applet for retrieving  
17 audio data can therefore provide an interface between the audio  
18 file and a destination for the audio data, where the destination  
19 can include a sound card or other interface to allow the audio  
20 data to be heard or otherwise presented to a user of the  
21 initiation device 21.

22 The applet for retrieving audio data and/or files can also  
23 be customized according to parameters established on the  
24 subscriber server 20 and/or by an entity having administrative

responsibilities for the subscriber server's web page.

Accordingly, the applet can be configured to provide a GUI or not provide a GUI. If a GUI is provided, the GUI can be customized with play, pause, stop, etc., buttons, a progress bar, various background and surround images, etc., and such customization parameters are provided for illustration and not limitation.

For example, referring to FIG. 4, a relationship between Link\_keys, media\_IDs, and audio files can be shown according to the methods and systems described herein. It can be understood that other data, such as duration of the audio file, can also be associated with the information displayed in FIG. 4, and hence FIG. 4 is merely representative of some information that can be associated. Accordingly, when the initiating device 21 of FIG. 3 activates the applet and the applet establishes a HTTP connection over port 80, the Link\_key provided by the applet can identify a media\_ID, which can thereafter identify an audio file. Furthermore, using a method or system according to FIGs. 1 and/or 2, an entity associated with the subscriber server 20, either using the telephone 38 and/or the microphone 26, and either with or without the use of an initiating device 21, can create a new audio file using methods and systems described herein. As indicated herein, a new audio file can be accompanied by an associated media\_ID. By specifying a PIN and/or subscriber 20 with the creation of the new audio file (either by telephone or

1 microphone), the system server 12 can associate the new audio  
2 file with a Link\_Key (associated with a subscriber server 20)  
3 using a notifier module 56, and cause the database 18 to be  
4 updated with the new media\_ID and hence, the associated new audio  
5 file. Using these methods and systems, a subscriber can modify  
6 the audio content associated with the subscriber server's web  
7 page, without modifying the web page.

8 In an embodiment, a subscriber can be provided with a  
9 telephone number and associated PIN to generate new audio files.

10 Additionally and optionally, a subscriber can be provided with a  
11 URL that can provide a microphone applet that can prompt the user  
12 for a PIN, and thereafter associate a new audio file with a  
13 particular Link\_ID.

14 In some embodiments according to FIG. 4, a history of  
15 Link\_ID associations with media\_IDs and audio files can be  
16 preserved to allow a subscriber to re-access or review audio  
17 files previously associated with the subscriber's web page. In  
18 some embodiments, a subscriber can have multiple PINs for  
19 multiple web pages, or multiple PINs for a single web page.

20 Referring now to FIG. 5, there is an embodiment employing  
21 the methods and systems herein that can allow various individuals  
22 to post audio on a subscriber's web page. Consider, for example,  
23 a web page that can be utilized for auctions, or additionally and  
24 optionally, for presenting items for sale, etc. In some

embodiments of these web pages, a user can register with the subscriber's web page by listing an item for sale. An applet or script can provide the user with a form for detailing particulars related to the item. In one embodiment, the user can be provided with an option for generating an audio file for association with the item. In one embodiment of such a system, the user can be presented with a "selection applet" that can be embedded within the subscriber's web page, and when selected, provides the user with an option of adding audio capability via a microphone or telephone. Depending upon the selection of microphone or telephone, the system server 12 can be contacted to generate a PIN, or PIN and telephone number combination, respectively. The PIN and/or a customer ID number, or other identification data, can thereafter be utilized to associate the yet-to-be-created audio file with the subscriber server 20 and the item or product that the user is advertising. Using the methods and systems described herein, the user can then view a customized applet (microphone) or access customized telephone prompts (telephone) to record, review, etc. an audio file as provided previously herein. Once the audio file and PIN are received and associated, a media\_ID can be generated and associated with the audio file and stored in the database 18. The notifier module 56 can thereafter generate a HTTP post to the subscriber server 20 to provide the media\_ID and the associated customer information to

1 the subscriber server 20. The subscriber server 20 can  
2 thereafter create a HTML applet tag that includes the media\_ID,  
3 such that when the subscriber web page is downloaded by a user  
4 and the user selects an option to listen to the audio data, a  
5 connection to the system server 12 and the audio file can be made  
6 using the media\_ID. In some embodiments, the subscriber server  
7 12 can therefore maintain a database or other record of media\_IDs  
8 and customer IDs and/or product identification, or other type of  
9 association.

10 For the systems and methods described according to FIG. 5,  
11 the HTTP post from the notifier module 56 can be received by a  
12 CGI program on the subscriber server 20. Accordingly, clients  
13 (e.g., those posting items and/or audio on the subscriber server  
14 20) of the subscriber server 20 can modify associated audio  
15 automatically and independently, without requiring the subscriber  
16 to change the web page. In other embodiments, a subscriber's CGI  
17 program that receives the HTTP post, may not automatically update  
18 the file, and may provide a mechanism to allow approval of audio  
19 before posting.

20 The systems and methods disclosed herein can thus be widely  
21 utilized. For example, the systems and methods according to FIG.  
22 3 can be deemed "static" systems and methods that can include a  
23 non-changing PIN that can allow a web page to be automatically  
24 updated with audio without requiring a subscriber to change or



1 otherwise alter a web site. Other embodiments according to FIG.  
2 5 can be termed "dynamic" systems and methods that can provide a  
3 new PIN to an entity to allow a conditional updating of audio  
4 data based on, for example, proper identification (customer ID,  
5 PIN, or other identifying information) and/or approval by the  
6 subscriber server. It can be understood in such systems that  
7 PINs can be dynamically generated.

8 In another embodiment that can be referred to herein as  
9 "hybrid" systems and methods, non-changing PINs can be provided  
10 to certain entities (e.g., individual, group, or other capable of  
11 recording audio); however, rather than automatically causing an  
12 update of the information per the static systems and methods, the  
13 hybrid systems can allow approval of the audio postings per the  
14 dynamic systems and methods. Accordingly, a system and method  
15 according to FIG. 6 can be understood to represent hybrid methods  
16 and systems. As indicated in FIG. 6, a subscriber server 20 can  
17 be equipped, as in the dynamic systems and methods, with a web  
18 page that includes a HTML applet tag having a media\_ID. The web  
19 page can accordingly be downloaded to an initiating device 21.  
20 Accordingly, a user with a PIN can either activate a URL to  
21 record audio data using a microphone applet, or record audio data  
22 using a telephone (either after accessing the subscriber web  
23 site, or independent of the web site). Once the recorded data is  
24 posted to the file server 52 of the system server 12 and a new

1 media\_ID is generated and stored in the media ID database 18, the  
2 notifier module 56 can generate an email to the subscriber 20 to  
3 indicate that a new audio file is available, specifying the new  
4 media\_ID. Accordingly, a subscriber, using either a specified  
5 URL and PIN, or a designated telephone number and PIN, can access  
6 the audio data via the new media\_ID, to approve the audio. Upon  
7 approval, the subscriber 20 can alter the HTML applet tag 54 to  
8 include the new media\_ID.

9 As indicated herein, for the systems and methods, audio  
10 files can be accessed for listening via a URL or an applet tag  
11 that can be embedded in a web page. Additionally, audio files  
12 can be accessed independent of a web page, via a telephone, with  
13 the appropriate PIN and/or customer ID, and media\_ID.

14 Those with ordinary skill in the art will recognize that the  
15 subscriber server 20 of the illustrated embodiments can be  
16 replaced with or otherwise be accompanied by an email server.  
17 Accordingly, in one such embodiment, a user can access a web  
18 page, and be provided with an option to post audio data via a  
19 microphone or telephone, as provided herein. The user can also  
20 designate one or more email addresses, a written message, a  
21 subject, cc'ed email addresses, etc. Upon posting of the audio  
22 message to the system server 12, a media\_ID can be generated and  
23 the notifier module 56 can post the media\_ID and email  
24 information to an email server that can generate an email. The

1 email can be, for example, a HTML document that can include HTML  
2 applet tags that can reference applets on the system server 12.  
3 In one embodiment, the HTML email document can include a  
4 reference to the audio player applet with standard (customized)  
5 features selected.

6 What has thus been described is a system and method to allow  
7 communications systems users, such as internet users, to create  
8 and retrieve audio files from a centrally stored database,  
9 without requiring specific installation of software or hardware.

10 In one embodiment, the systems and methods are implemented  
11 entirely in JAVA to allow compatibility across all operating  
12 systems and to preclude specific installation requirements. The  
13 audio data may be posted to an internet browser using HTTP  
14 conventions to eliminate firewall and other filtering issues.  
15 Audio posting and listening capabilities can also be provided to  
16 subscriber websites without imposing software, hardware, or  
17 bandwidth constraints. Specified URLs on subscriber websites may  
18 call a generic applet that, together with subscriber  
19 identification information, allows for the display of customer  
20 specific graphics on the subscriber website. The centrally  
21 located database may be categorized by subscriber for privacy  
22 issues.

23 The methods and systems described herein are not limited to  
24 a particular hardware or software configuration, and may find

1 applicability in many computing or processing environments. The  
2 methods and systems can be implemented in hardware or software,  
3 or a combination of hardware and software. The methods and  
4 systems can be implemented in one or more computer programs  
5 executing on one or more programmable computers that include a  
6 processor, a storage medium readable by the processor (including  
7 volatile and non-volatile memory and/or storage elements), one or  
8 more input devices, and one or more output devices.

9 The computer program(s) is preferably implemented using one  
10 or more high level procedural or object-oriented programming  
11 languages to communicate with a computer system; however, the  
12 program(s) can be implemented in assembly or machine language, if  
13 desired. The language can be compiled or interpreted.

14 The computer program(s) can be preferably stored on a  
15 storage medium or device (e.g., CD-ROM, hard disk, or magnetic  
16 disk) readable by a general or special purpose programmable  
17 computer for configuring and operating the computer when the  
18 storage medium or device is read by the computer to perform the  
19 procedures described herein. The system can also be considered  
20 to be implemented as a computer-readable storage medium,  
21 configured with a computer program, where the storage medium so  
22 configured causes a computer to operate in a specific and  
23 predefined manner.

1           Although the methods and systems have been described  
2 relative to a specific embodiment thereof, they are not so  
3 limited. Obviously many modifications and variations may become  
4 apparent in light of the above teachings. For example, although  
5 the illustrated embodiments included block diagrams, the blocks  
6 and associated features can be combined in different ways and the  
7 illustrated presentation of features is provided merely to  
8 facilitate understanding and not to provide limitation.  
9 Additionally, many devices exist for accessing the internet  
10 without the use of a computer, for example, using a modem that  
11 provides information to a television screen for display. The  
12 invention herein is not limited to the Network User access  
13 method, and any acceptable configuration or method for accessing  
14 the internet or communications network is acceptable. Although  
15 the methods and systems disclosed were applied to a web page, the  
16 methods and systems can be used to generate another type of HTML  
17 document, such as an email that can be provided to an email  
18 server. It can thus be understood that an email server can  
19 replace or otherwise accompany the subscriber server in the  
20 illustrated embodiments. Additionally, although HTML documents  
21 were used in the example systems and methods, other document  
22 formats, including XML, SGML, GML, or other markup languages, can  
23 be used. Although the methods and systems utilized Java for  
24 components, other languages can be used. Similarly, although

1 applets and applet tags were illustrated, other methods of  
2 providing pointers can be used. Although the audio data can be  
3 played and otherwise presented to a speaker or other listening  
4 device as an output device, the audio data can also be converted  
5 for presentation, from audio, to text, for example, using well-  
6 known speech recognition products. In such an embodiment, the  
7 output device for the audio can be a speech recognition module.

8 Many additional changes in the details, materials, and  
9 arrangement of parts, herein described and illustrated, can be  
10 made by those skilled in the art. Accordingly, it will be  
11 understood that the following claims are not to be limited to the  
12 embodiments disclosed herein, can include practices otherwise  
13 than specifically described, and are to be interpreted as broadly  
14 as allowed under the law.